



National Pollutant Discharge Elimination System
Briefing Memo for
INDIANA GASIFICATION, LLC
May 2012

**Indiana Department of Environmental
Management**

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
Toll Free (800) 451-6027
www.idem.IN.gov

Permittee:	Indiana Gasification, LLC P.O. Box 55934 Indianapolis, IN 46205
Existing Permit Information:	This is a New NPDES Permit
Source Contact:	Mark Lubbers (317)490-5078
Source Location:	County Road 200 N and Base Road Rockport, Indiana Spencer County
Receiving Stream:	Ohio River; Strassell Ditch; Unnamed Tributary to Huffman Ditch; and Two Unnamed Ditches
Proposed Action:	New Permit: IN0063851 Date Application Received: 4/20/11
Source Category	NPDES Minor – Industrial
Permit Writer:	Richard Hamblin (317)232-8696 or rhamblin@idem.in.gov

Table of Contents

1.0 Introduction.....	3
2.0 Facility description	3
2.1 General.....	3
2.2 Outfall Locations	5
2.3 Wastewater Treatment	5
2.4 Changes in Operation.....	6
2.5 Facility Storm Water.....	7
3.0 Permit History.....	9
4.0 Receiving Water	9
4.1 Receiving Stream Water Quality	9
5.0 Permit limitations	9
5.1 Technology-Based Effluent Limits.....	10
5.2 Water Quality-Based Effluent Limits	11
5.3 Whole Effluent Toxicity	13
5.4 Antibacksliding	13
5.5 Antidegradation.....	13
5.6 Stormwater.....	14
5.7 Water Treatment Additives.....	15
6.0 Permit Draft Discussion	16
6.1 Discharge Limitations.....	16
6.2 Monitoring Conditions and Rationale.....	17
6.3 Schedule of Compliance	18
6.4 Special Conditions	18
6.5 Spill Response and Reporting Requirement	19
6.6 Permit Processing/Public Comment	20

1.0 INTRODUCTION

The Indiana Department of Environmental Management (IDEM) received a National Pollutant Discharge Elimination System (NPDES) Permit application from URS Corporation, on behalf of Indiana Gasification, on April 20, 2011. A five year permit is proposed in accordance with 327 IAC 5-2-6(a).

The Federal Water Pollution Control Act of 1972 and subsequent amendments require a NPDES permit for the discharge of wastewater to surface waters. Furthermore, Indiana Statute 13-15-1-2 requires a permit to control or limit the discharge of any contaminants into state waters or into a publicly owned treatment works. This proposed permit action by IDEM complies with both federal and state requirements.

In accordance with Title 40 of the Code of Federal Regulations (CFR) Sections 124.7 and 124.6, as well as Indiana Administrative Code (IAC) 327 Section 5, development of a Statement of Basis, or Briefing Memo, is required for NPDES permits. This document fulfills the requirements established in those regulations.

This Briefing Memo was prepared in order to document the factors considered in the development of NPDES Permit effluent limitations. The technical basis for the Briefing Memo may consist of evaluations of promulgated effluent guidelines, existing effluent quality, receiving water conditions, and wasteload allocations to meet Indiana Water Quality Standards. Decisions to award variances to Water Quality Standards or promulgated effluent guidelines are justified in the Briefing Memo where necessary.

2.0 FACILITY DESCRIPTION

2.1 General

Indiana Gasification, LLC is classified under Standard Industrial Classification (SIC) Code 4925 – Gas Production and/or Distribution and SIC Code 2819 – Industrial Inorganic Chemicals, Not Elsewhere Classified. The facility is a coal and petroleum coke gasification plant in Rockport, Indiana. The facility will use a quench gasification process to produce substitute natural gas (SNG) and liquefied carbon dioxide (CO₂). Upon completion, the facility expects to annually produce 48 billion cubic feet of SNG and 4.9 million tons of liquefied CO₂.

Gasification is the process by which a solid fuel source, water, and oxygen are subjected to high temperatures and pressures to create a ‘syngas’. The syngas can be cleaned to create SNG and CO₂. The CO₂ is removed and will be sold to third parties for use in enhanced oil recovery operations. The SNG will be sold as a replacement to regional natural gas.

A map showing the location of the facility has been included as Figure 1.

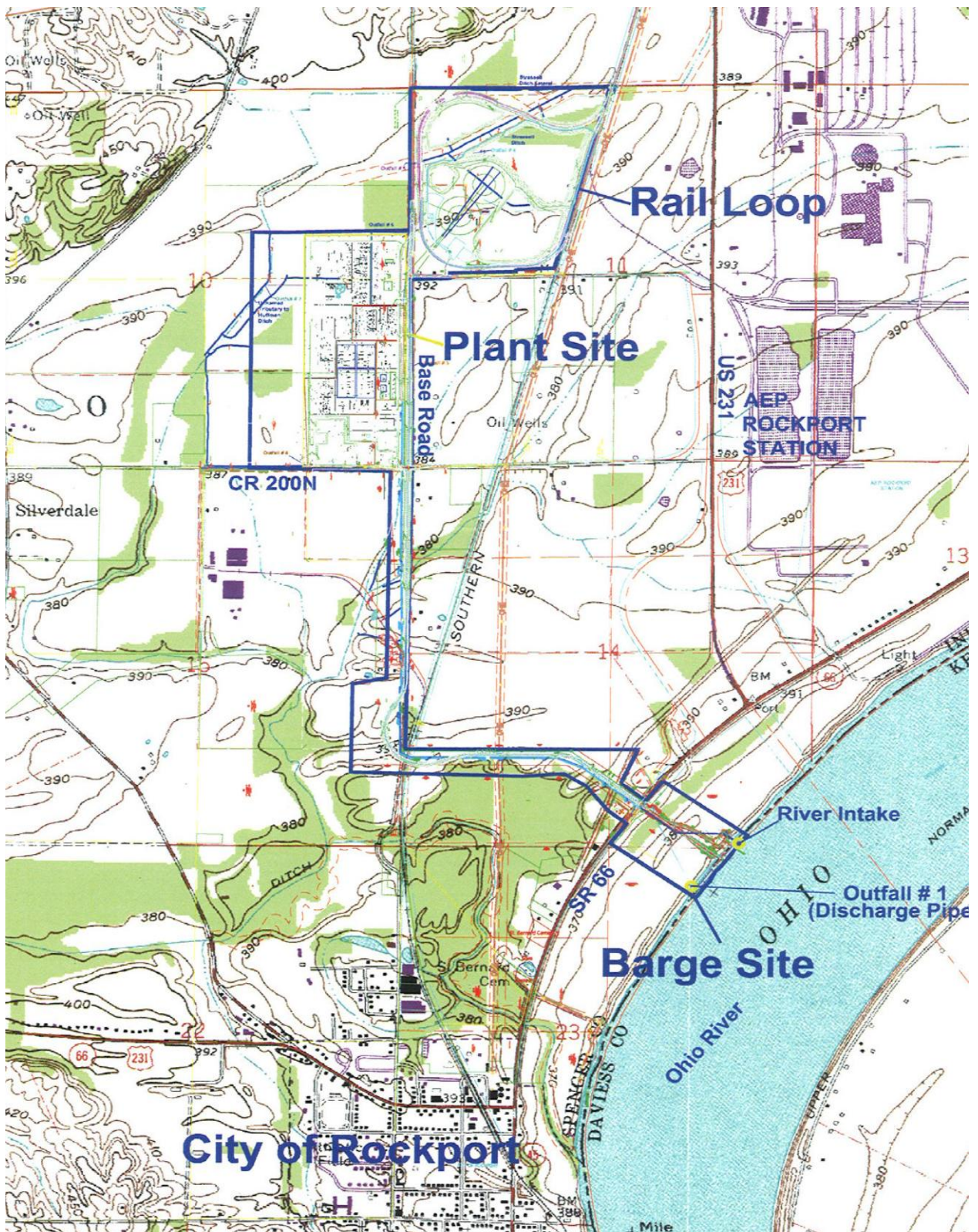


Figure 1: Facility Location

Spencer County

2.2 Outfall Locations

OUTFALL 001	Latitude: 37° 53' 60" Longitude: -87° 02' 30"
OUTFALL 002	Latitude: 37° 54' 58" Longitude: -87° 03' 17"
OUTFALL 003	Latitude: 37° 55' 11" Longitude: -87° 03' 17"
OUTFALL 004	Latitude: 37° 55' 40" Longitude: -87° 03' 12"
OUTFALL 005	Latitude: 37° 55' 40" Longitude: -87° 03' 15"
OUTFALL 006	Latitude: 37° 55' 30" Longitude: -87° 03' 16"
OUTFALL 007	Latitude: 37° 55' 23" Longitude: -87° 03' 39"
OUTFALL 008	Latitude: 37° 54' 58" Longitude: -87° 03' 32"

2.3 Wastewater Treatment

Raw water is provided from an intake structure on the Ohio River. The raw river water is then treated by clarification and stored as service water. The service water is treated by reverse osmosis (RO), softeners, and clarifiers to a quality suitable for cooling water make-up, service water, and fire water. The facility plans to discharge non-contact cooling water, boiler blowdown, RO reject water, water softener regenerant, plant and equipment drains, and storm water. Process wastewater will be collected and treated in a zero liquid discharge (ZLD) system with no resultant effluent.

Non-contact cooling water and boiler blowdown are treated by chlorine residual removal and are expected to have an average discharge of 2.13 MGD. RO reject water and softener regenerant may be neutralized, if needed, prior to being discharged via Outfall 001. During such discharge periods, the RO and softener wastewater flow are expected to be approximately 0.36 MGD. Wastewater from equipment drains that contribute to the discharge at Outfall 001 are treated in an oil/water separator and could discharge approximately 0.04 MGD.

A Flow Diagram has been included as Figure 2. Flows given in Figure 2 are gallons per minute (gpm).

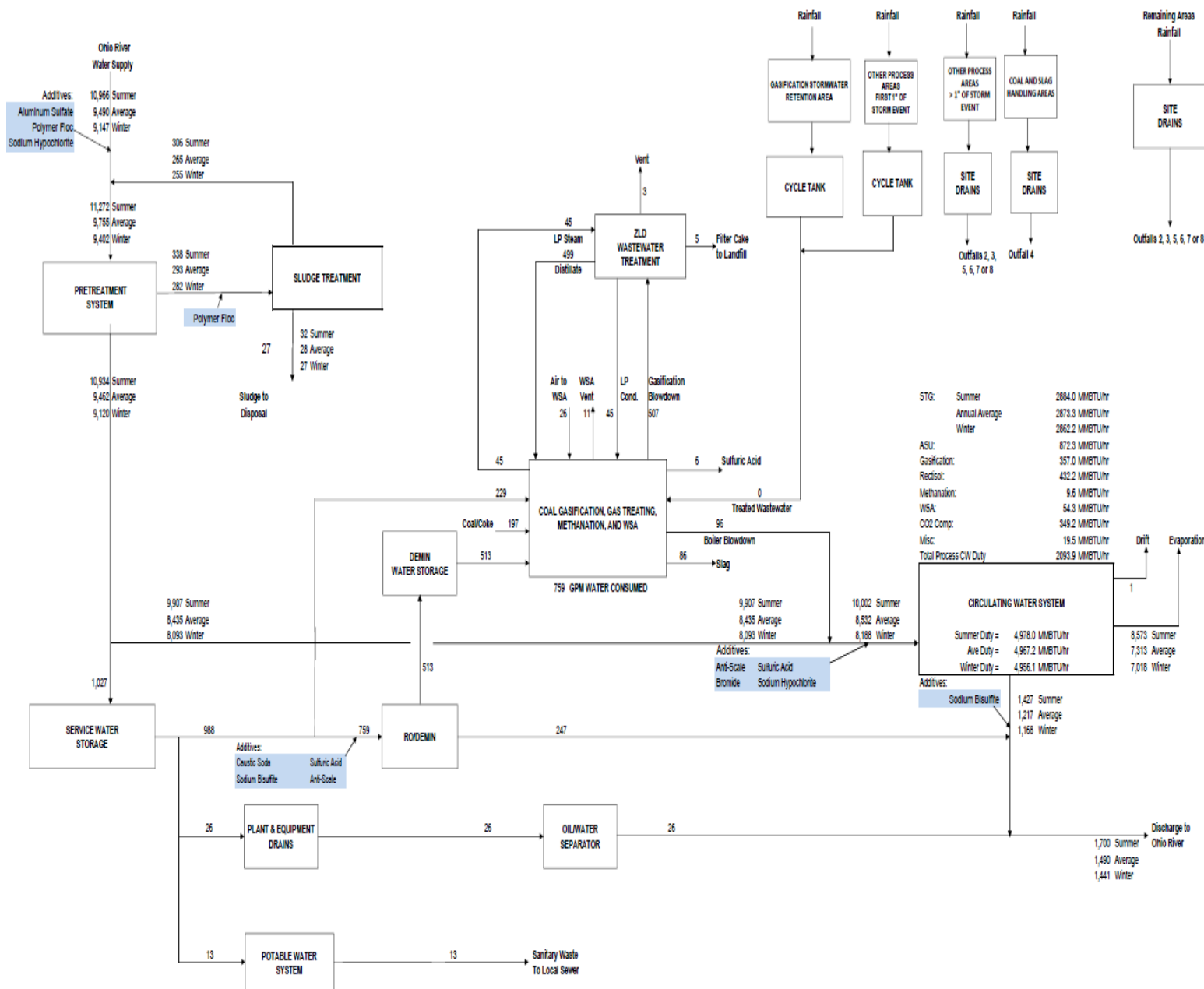


Figure 2: Flow Diagram

The permittee shall have the wastewater treatment facilities under the responsible charge of an operator certified by the Commissioner in a classification corresponding to the classification of the wastewater treatment plant as required by IC 13-18-11-11 and 327 IAC 5-22-5. In order to operate a wastewater treatment plant the operator shall have qualifications as established in 327 IAC 5-22-7. IDEM has given the permittee a Class A-SO industrial wastewater treatment plant classification.

2.4 Changes in Operation

This is a new NPDES permit.

2.5 Facility Storm Water

Storm water is collected and discharged at all outfalls except Outfall 001. Outfalls 002 through 008 are storm water only. Please refer to Section 5.6 of this Briefing Memo for more information regarding storm water requirements.

Outfalls 002 and 003 discharge to a county road side ditch. Outfall 004 discharges to an unnamed tributary to Strassell Ditch. Outfall 005 discharges to Strassell Ditch. Outfalls 006 and 007 discharge to an unnamed tributary to Huffman Ditch. Outfall 008 discharges to another county road side ditch.

Illinois Basin coal and petcoke will be brought to the facility by rail and truck and on barges via a loading facility on the Ohio River near the US 231 Bridge. Both coal and petcoke will be transferred into the facility by a covered conveyor system. During operation, coal and petcoke will be stored on an approximately 176 acre parcel prior to use in the production process. This parcel will also include a storage area for the washed, vitrified slag byproduct. The coal/petcoke will be moved to production by covered conveyors.

Indiana Gasification has designed a storm water storage pond system capable of holding runoff from a 100-year storm event. This large-volume system (Basins A, B, C and D) will receive storm water runoff from the gasification and other process areas and feedstock storage areas of the facility and will result in storm water from these areas rarely being discharged.

For the gasification storm water retention area, storm water will be routed to enclosed subsurface storm water Basin A, where it will be captured and returned for use in the gasification process. For other process areas, the first flush (1 inch) of storm water will also be routed to Basin A and returned for use in the gasification process, and rainwater greater than 1 inch would discharge to perimeter outfalls. Basin A does not discharge.

Storm water from the feedstock storage area may be routed to Basins B, C, and D. If Basin B were to discharge, it would discharge to Basin C. If Basin C were to discharge, it would discharge to Basin D. If Basin D were to discharge, it will discharge to Outfall 004.

Any water recycled for use as make-up water is not required to be sampled.

The figure below identifies areas of drainage and storm water outfall locations.

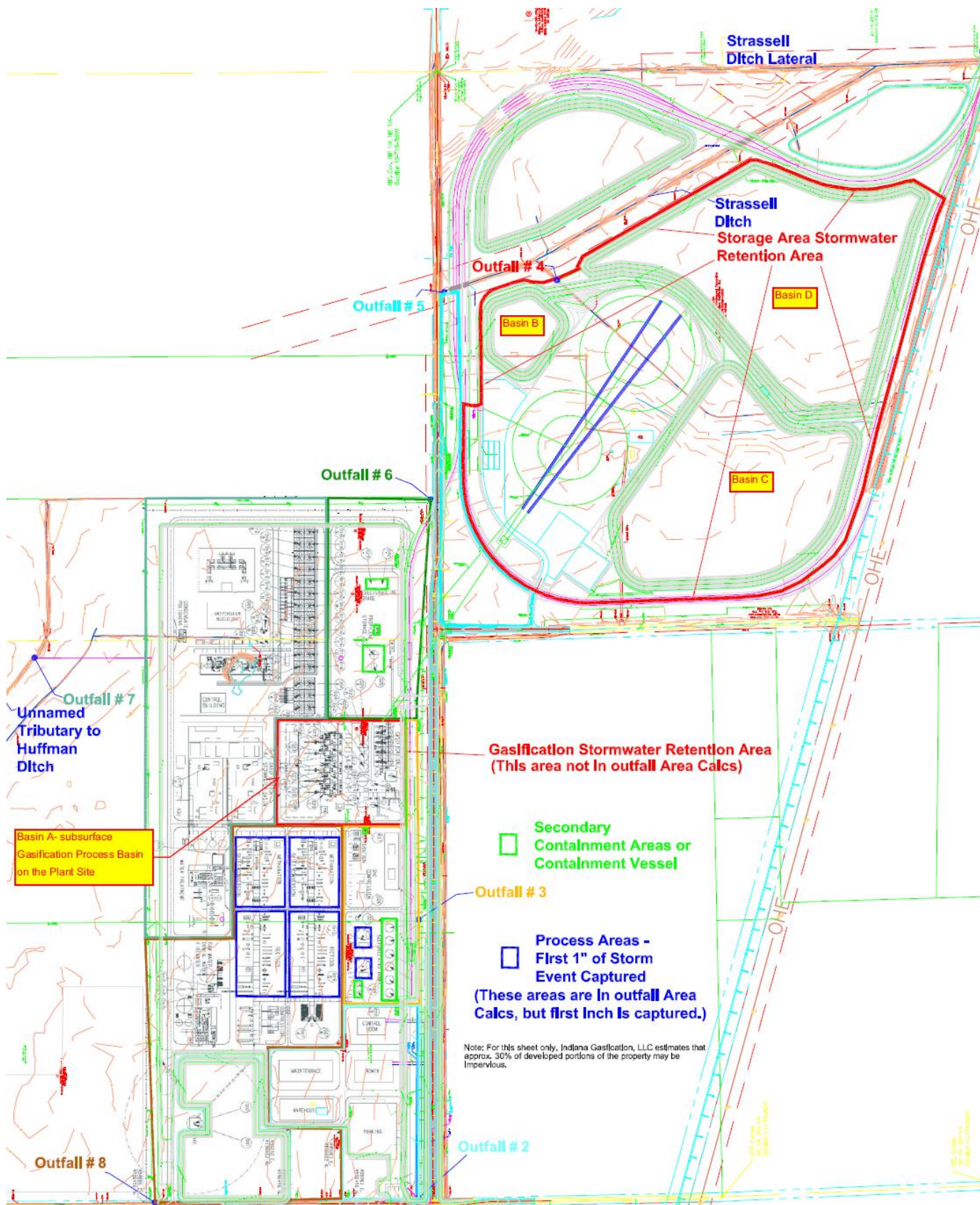


Figure 3: Storm Water Drainage Diagram

3.0 PERMIT HISTORY

This is a New NPDES Permit and has not recorded a compliance history.

4.0 RECEIVING WATER

The receiving stream for Outfall 001 is the Ohio River. The $Q_{7,10}$ low flow value of the Ohio River is 11,000 cfs and shall be capable of supporting a well balanced warm water aquatic community and full body contact recreation in accordance with 327 IAC 2-1-3.

The receiving stream for Outfalls 002 and 003 is a county roadside ditch. The receiving stream for Outfall 004 is an unnamed tributary to Strassell Ditch. The receiving stream for Outfall 005 is Strassell Ditch. The receiving stream for Outfalls 006 and 007 is an unnamed tributary to Huffman Ditch. The receiving stream for Outfall 008 is another county roadside ditch. The $Q_{7,10}$ low flow values of the ditches and unnamed tributary is considered to be 0.0 cfs. However, all receiving streams shall be capable of supporting a well balanced warm water aquatic community and full body contact recreation in accordance with 327 IAC 2-1-3.

4.1 Receiving Stream Water Quality

The Ohio River is identified on the 2008 303(d) List of Impaired Waters, from Cannelton to Newburgh, Indiana, for mercury and PCBs in fish tissue. A Total Maximum Daily Load (TMDL) report has not been completed for this stretch of receiving stream. Strassell Ditch, Huffman Ditch, and the county roadside ditches are not identified on the 303(d) list.

5.0 PERMIT LIMITATIONS

Two categories of effluent limitations exist for NPDES permits: 1) Technology based effluent limits, and 2) Water quality based effluent limits.

Technology based effluent limits are developed by applying the national effluent limitation guidelines (ELGs) established by EPA for specific industrial categories. Technology based effluent limits were established to require a minimum level of treatment for industrial or municipal sources using available technology. In the absence of federally promulgated guidelines effluent limits can also be based upon BPJ. Technology based limits are the primary mechanism of control and enforcement of water pollution under the CWA. Technology based treatment requirements under section 301(b) of the CWA represent the minimum level of control that must be imposed in a section 402 permit [40 CFR 125.3(a)]. Accordingly, every individual member of a discharge class or category is required to operate their water pollution control technologies according to industry-wide standards and accepted engineering practices. This means that technology-based effluent limits based upon a BPJ determination are applied at end-of-pipe and mixing zones are not allowed [40 CFR 125.3(a)]. Similarly, since the statutory deadlines for BPT, BAT and BCT have all passed, compliance schedules are also not allowed.

Water quality based effluent limits are designed to be protective of the beneficial uses of the receiving water and are independent of the available treatment technology. In addition, when performing a permit renewal, there are existing permit limits. These may be technology-based limits, water quality-based limits, or limits based on best professional judgment. When renewing a permit, the most stringent of technology based or water quality based limits apply.

According to 40 CFR 122.44 and 327 IAC 5, NPDES permit limits are based on either technology-based limitations, where applicable, best professional judgment (BPJ), or Indiana Water Quality-Based Effluent Limitations (WQBEL's), whichever is most stringent. The decision to limit or monitor the parameters contained in this permit is based on information contained in the permittee's NPDES application.

The water quality-based effluent limitations for this facility are based on water quality criteria in 327 IAC 2-1-6 or under the procedures described in 327 IAC 2-1-8.2 through 327 IAC 2-1-8.6 and implementation procedures in 327 IAC 5. Limitations and/or monitoring are required for parameters identified by applications of the reasonable potential to exceed WQBEL under 327 IAC 5-2-11.1 (h)(1).

- Narrative Water Quality Based Limits

The narrative water quality contained under 327 IAC 2-1-6(a)(1) (A)-(E) have been included in this permit to ensure that the narrative water quality criteria are met.

- Numeric Water Quality Based Limits

The numeric water quality criteria and values contained in this permit have been calculated using the tables of water quality criteria under 327 IAC 2-1-6(b) & (c).

5.1 Technology-Based Effluent Limits

USEPA has been developing ELGs for existing industrial and commercial activities since 1972 as directed in the original Federal Water Pollution Control Act (40 CFR 403 through 471 inclusive). However, ELGs have not yet been developed for gasification dischargers. IDEM is establishing technology-based effluent limitations in the proposed permit utilizing Best Professional Judgment (BPJ) to meet the requirements of Best Conventional Technology and Best Available Technology Economically Achievable (BCT/BAT) [40 CFR 122.43, 122.44, 125.3, and 402(a)(1)]. The intent of a technology-based effluent limitation is to require a minimum level of treatment for industrial point sources based on currently available treatment technologies.

Although ELGs have not been developed for gasification industries, certain wastewater sources are identical in nature to wastewater sources addressed in Steam Electric Power Generating ELGs including the pollutants of concern (40 CFR 423). IDEM believes that it is appropriate to include BPJ technology limitations essentially the same as those found in Part 423. IDEM believes that the technical documents underlying the Steam Electric Effluent Limitation Guidelines provide sufficient record as to the need and the feasibility for the inclusion of such limitations. Since Indiana Gasification is a newly constructed facility, the discharge from the coal/petcoke storage area and cooling tower blowdown will receive BPJ technology-based effluent limitations similar to those identified in 40 CFR 423.15, New Source Performance Standards.

TBELs often apply at internal monitoring locations because they have to be met prior to being introduced to any other wastestream that will dilute the categorical wastestream. Internal Outfall 101 is established as the monitoring location immediately following the cooling tower blowdown point but prior to mixing with other water sources and/or wastestreams. The discharge from the coal/petcoke storage area does not require an internal monitoring point and will remain as the overflow point of Basin D, Outfall 004, because there are no additional wastestreams that contribute to the discharge.

40 CFR 423.15(j)(1) identifies effluent limitations for cooling tower blowdown. The effluent limitations include monthly average and daily maximum concentrations for free available chlorine, total chromium, and total zinc. In addition, there shall be no detectable amount of the 126 priority pollutants contained in chemicals added for cooling tower maintenance except chromium and zinc in the discharge of cooling tower blowdown. However, this agency has determined that monitoring requirements for the parameters

below are sufficient for analysis of cooling tower blowdown. The following parameters are included at Internal Outfall 101:

- Free Available Chlorine

The TBEL for free available chlorine is 0.5 mg/l. However, free available chlorine is a portion of measured total residual chlorine (TRC). The WQBEL for TRC is more stringent than the TBEL. Therefore, TRC is limited at Outfall 001 by Indiana water quality standards.

- Total Chromium and Zinc

The above identified parameters are included at Internal Outfall 101 and are required to be measured and reported in concentration twice yearly. The permit may be modified, after public notice, to reduce monitoring requirements or to add effluent limitation requirements, whichever is warranted by the effluent data.

- 126 Priority Pollutants

A list of the 126 priority pollutants can be found in Appendix A of 40 CFR 423. 40 CFR 423.15(j)(3) states that, "compliance with the limitations for the 126 priority pollutants...may be determined by engineering calculations which demonstrate that the regulated pollutants are not detectable in the final discharge by the analytical methods in 40 CFR part 136". Total chromium and zinc are not included in this requirement, even though they are on the list of 126 priority pollutants, because they are specifically limited in the permit.

40 CFR 423.15(k) identifies effluent limitations for coal pile runoff. The coal pile runoff from this facility is expected to be identical in nature to coal pile runoff from electric generating facilities. Therefore, the following parameter is included at Outfall 004:

- Total Suspended Solids

40 CFR 423.15(k) identifies a daily maximum concentration of TSS not to exceed 50 mg/l. Pursuant to 40 CFR 423.15(l), any untreated overflow from facilities designed, constructed, and operated to treat the coal pile runoff which results from a 10 year, 24 hour rainfall event shall not be subject to the limitations in §423.15(k). The facility will be responsible for demonstrating the discharge is from such an event.

5.2 Water Quality-Based Effluent Limits

The Water Quality-Based Effluent Limits (WQBELs) were calculated using the criteria contained in Table 1 of 327 IAC 2-1-6, Minimum Surface Water Quality Standards, and the procedure contained in 327 IAC 5-2-11.1, Establishment of Water Quality-Based Effluent Limitations for Dischargers not discharging to Waters within the Great Lakes System.

All Outfalls

- pH

Discharges to waters of the state are limited to the range of 6.0-9.0 s.u., in accordance with 327 IAC 2-1-6. This limitation applies to all outfalls.

- Flow

The permittee's flow is to be monitored in accordance with 327 IAC 5-2-13(a)2. This requirement applies to all outfalls.

Outfall 001

- Temperature

Although a significant portion of the permittee's discharge is boiler blowdown and cooling tower blowdown, it is not expected to exceed Indiana's Water Quality Standards for temperature. Therefore, temperature monitoring at Outfall 001 is included to determine if a reasonable potential to exceed the water quality standards exists.

- Oil and Grease

Oil and Grease limitations are based upon 327 IAC 5-5-2(h)(2) and are 15.0 mg/l Daily Maximum and 10.0 mg/l Monthly Average at Outfall 001. Also, these limits are considered sufficient to ensure compliance with narrative water quality criteria in 327 IAC 2-1-6(a)(1)(C) that prohibits oil or other substances in amounts sufficient to create a visible film or sheen on the receiving water.

- Total Residual Chlorine

TRC limitations are included at Outfall 001 due to the use of sodium hypochlorite. The effluent limitations for TRC are 0.02 mg/l monthly average and 0.04 mg/l daily maximum.

The permittee will be considered in compliance with the permit limits for TRC if the effluent concentrations measured are less than the Limit of Quantitation (LOQ) of 0.06 mg/l. If the measured concentration of TRC is greater than the water quality based effluent limit and above the respective Limit of Detection (LOD) of 0.02 mg/l any three (3) consecutive analyses, or any five (5) out of nine (9) analyses, then the discharger shall re-examine the chlorination/dechlorination procedures.

The permittee may determine a case-specific LOD or LOQ using the analytical method specified below, or any other test method which is approved by the Commissioner prior to use. The LOD shall be derived by the procedure specified for method detection limits contained in 40 CFR 136, Appendix B, and the LOQ shall be set equal to 3.18 times the LOD.

<u>Parameter</u>	<u>Test Method</u>	<u>LOD</u>	<u>LOQ</u>
Chlorine	4500-Cl-D,E or 4500-Cl-G	0.02 mg/l	0.06 mg/l

- Total Residual Oxidants

The monitoring requirement and effluent limitation for Total Residual Oxidants (TRO) will apply at Outfall 001 based on the use of Bromide as a water treatment additive. The same test methods to measure for Total Residual Chlorine are used to determine the level of Total Residual Oxidants. At present, two test methods are considered to be acceptable to IDEM, amperometric (EPA Method 330.1, 4500-Cl-D,E) and DPD colorimetric methods (EPA Method 330.5, 4500-Cl-G), to determine TRO concentrations at the level of 0.06 mg/l. Since currently available technology can easily treat to levels below method quantitation, the TRO limitation is incorporated into this permit as 0.06 mg/l. If another EPA test method is to be used, the method must first be approved by this Agency.

- Mercury

Mercury is recognized as a bioaccumulative compound of concern (BCC). The facility uses Ohio River water as make-up water to the cooling towers. Since the Ohio River is impaired for mercury in fish tissue, IDEM will include monitoring requirements for mercury to identify if mercury contained in the intake water is concentrated in the recirculating cooling tower to levels that cause excursions above Indiana water quality standards. Please refer to Section 6.4 of this Briefing Memo for additional information.

Outfalls 002 through 008

- Oil and Grease, COD, CBOD₅, Total Kjeldahl Nitrogen (TKN), Nitrate plus Nitrite Nitrogen, and Total Phosphorus

These parameters are included as monitor only in all permits with storm water outfalls and are consistent with other similarly issued permits.

Outfall 004

- Iron, Manganese, Nickel, and Zinc

These parameters are to be monitored because they are known to be present in the discharge of coal pile runoff. Once sufficient data has been collected, a review of the reporting requirement can be performed. The permit may be modified, after public notice, to reduce monitoring requirements or to add effluent limitation requirements, whichever is warranted by the effluent data.

5.3 Whole Effluent Toxicity

The permit does not contain a requirement to do WET Testing.

5.4 Antibacksliding

As this permit is for a proposed new facility, backsliding regulations do not apply.

5.5 Antidegradation

The permittee has submitted an antidegradation demonstration as part of their NPDES permit application. 327 IAC 2-1-2 states, in part, that, “All waters whose existing quality exceeds the standards established herein as of February 17, 1977, shall be maintained in their present high quality unless and until it is affirmatively demonstrated to the commissioner that limited degradation of such waters is justifiable on the basis of necessary economic or social factors and will not interfere with or become injurious to any beneficial uses made of, or presently possible, in such waters.” Currently, proposed rules on downstate antidegradation procedures are on Public Notice (Proposed 327 IAC 2-1.3). The determination of the accuracy and completeness of this demonstration was based on Best Professional Judgment (BPJ) and the draft version of rules.

In the antidegradation demonstration, the facility highlights the fact that the only water proposed for discharge is non-process wastestreams and storm water. Therefore, the facility states that, “Because the substances were already present in the Ohio River water withdrawn for use at the facility and IG [Indiana Gasification] does not add amounts of any of these substances to the water being discharged (with the exception of small amounts of treatment chemicals), the mass of these substances in the intake water and the effluent flow essentially remain the same.” Of the instances in which loadings may increase in the discharge, all have been demonstrated to be below ‘de minimis’ and not causing a significant lowering of water quality in the Ohio River. The antidegradation demonstration submitted shows that there will be no additional lowering of the water quality with respect to mercury.

Furthermore, the antidegradation demonstration identifies several measures considered and implemented during facility design and construction phases with the purpose of reducing potential impacts to the Ohio River. First, a Zero Liquid Discharge (ZLD) has been proposed at the facility. The ZLD will evaporate gasification process wastewater and recycle any concentrate back into the process. Second, storm water collected from process areas is directed to a 100-year storm event pond. Water from this pond will be taken for use as make-up water to minimize discharge impacts and supplement intake water demands.

Based on a review of the antidegradation demonstration, this agency determines that the discharge will comply with 327 IAC 2-1-2. A full copy of the Antidegradation Demonstration submitted by Indiana Gasification is provided as Appendix A of this Briefing Memo.

5.6 Stormwater

According to 40 CFR 122.26(b)(14)(ii) and 327 IAC 5-4-6(b)(1) facilities classified under SIC Code 28 are considered to be engaging in “industrial activity” for purposes of 40 CFR 122.26(b). Therefore the permittee is required to have all storm water discharges associated with industrial activity permitted. Treatment for storm water discharges associated with industrial activities is required to meet, at a minimum, best available technology economically achievable/best conventional pollutant control technology (BAT/BCT) requirements. EPA has determined that non-numeric technology-based effluent limits have been determined to be equal to BPT/BAT/BCT for storm water associated with industrial activity.

Storm water associated with industrial activity must be assessed to determine compliance with all water quality standards. The non-numeric storm water conditions and effluent limits contain the technology-based effluent limitations. Effluent limitations, as defined in the CWA, are restrictions on quantities, rates, and concentrations of constituents which are discharged. Effective implementation of these requirements is expected to meet the applicable water quality based effluent limitations. Violation of any of these effluent limitations constitutes a violation of the permit.

The technology-based effluent limitations require the permittee to minimize exposure of raw, final, or waste materials to rain, snow, snowmelt, and runoff. In doing so, the permittee is required, to the extent technologically available and economically practicable and achievable, to either locate industrial materials and activities inside or to protect them with storm resistant coverings. In addition, the permittee is required to: (1) use good housekeeping practices to keep exposed areas clean, (2) regularly inspect, test, maintain and repair all industrial equipment and systems to avoid situations that may result in leaks, spills, and other releases of pollutants in stormwater discharges, (3) minimize the potential for leaks, spills and other releases that may be exposed to stormwater and develop plans for effective response to such spills if or when they occur, (4) stabilize exposed area and contain runoff using structural and/or non-structural control measures to minimize onsite erosion and sedimentation, and the resulting discharge of pollutants, (5) divert, infiltrate, reuse, contain or otherwise reduce stormwater runoff, to minimize pollutants in your discharges, (6) enclose or cover storage piles of salt or piles containing salt used for deicing or other commercial or industrial purposes, including maintenance of paved surfaces, (7) train all employees who work in areas where industrial materials or activities are exposed to stormwater, or who are responsible for implementing activities necessary to meet the conditions of this permit (e.g., inspectors, maintenance personnel), including all members of your Pollution Prevention Team, (8) ensure that waste, garbage and floatable debris are not discharged to receiving waters by keeping exposed areas free of such materials or by intercepting them before they are discharged, and (9) minimize generation of dust and off-site tracking of raw, final or waste materials.

To meet the non-numeric effluent limitations in Part I.D.4, the permit requires Indiana Gasification to select control measures (including best management practices) to address the selection and design considerations in Part I.D.3.

The permittee must control its discharge as necessary to meet applicable water quality standards. It is expected that compliance with the non-numeric effluent limitations and other terms and conditions in this permit will meet this effluent limitation. However, if at any time the permittee, or IDEM, determines that the discharge causes or contributes to an exceedance of applicable water quality standards, the permittee must take corrective actions, and conduct follow-up monitoring.

“Term and Condition” to Provide Information in a SWPPP

Distinct from the effluent limitation provisions in the permit, the permit requires the discharger to prepare a Stormwater Pollution Prevention Plan (SWPPP) for its facility. The SWPPP is intended to document the selection, design, installation, and implementation (including inspection, maintenance, monitoring, and corrective action) of control measures being used to comply with the effluent limits set forth in Part I.D. of the permit. In general, the SWPPP must be kept up-to-date, and modified whenever necessary to reflect any changes in control measures that were found to be necessary to meet the effluent limitations in this permit.

The requirement to prepare a SWPPP is not an effluent limitation, rather it documents what practices the discharger is implementing to meet the effluent limitations in Part I.D. of the permit. The SWPPP is not an effluent limitation because it does not restrict quantities, rates, and concentrations of constituents which are discharged. Instead, the requirement to develop a SWPPP is a permit “term or condition” authorized under sections 402(a)(2) and 308 of the Act. Section 402(a)(2) states, “[t]he Administrator shall prescribe conditions for [NPDES] permits to assure compliance with the requirements of paragraph (1) of this subsection, including conditions on data and information collection, reporting, and such other requirements as he deems appropriate.” The SWPPP requirements set forth in this permit are terms or conditions under the CWA because the discharger is documenting information on how it intends to comply with the effluent limitations (and inspection and evaluation requirements) contained elsewhere in the permit. Thus, the requirement to develop a SWPPP and keep it updated is no different than other information collection conditions, as authorized by section 402(a)(2), in other permits.

IDEM's Non-Numeric Effluent Limitations and SWPPP language was modeled from and is consistent with the EPA's Multi-Sector General Permit for Storm Water Discharges Associated with Industrial Activity, issued on September 29, 2008. It should be noted that EPA has developed a guidance document, "Storm Water Management for Industrial Activities: Developing Pollution Prevention Plans and Best Management Practices", 1992 to assist facilities in developing a SWPPP. The guidance contains worksheets, checklists, and model forms that should assist a facility in developing a SWPPP.

Public availability of documents

Part I.E.2.d(2) of the permit requires that the permittee retain a copy of the current SWPPP at the facility and it must be immediately available, at the time of an onsite inspection or upon request, to IDEM. Additionally, interested persons can request a copy of the SWPPP through IDEM. By requiring members of the public to request a copy of the SWPPP through IDEM, the Agency is able to provide the permittees with assurance that any Confidential Business Information contained within its SWPPP is not released to the public.

5.7 Water Treatment Additives

In the event that changes are to be made in the use of water treatment additives including dosage rates and concentrations contributing to Outfall 001, the permittee shall notify the Indiana Department of Environmental Management as required by Part II.C. 1. of this permit. The permittee must provide the acute and chronic aquatic toxicity information on any new or changed water treatment additives. The following water treatment additives have been approved for use: MegaFloc 450; Liquid Alum; Sodium Hypochlorite; Caustic Soda; Sodium Bisulfite; Sulfuric Acid; AZ8104 Inhibitor; Accepta 2206; Tower MP 5000; and Bromide Plus.

6.0 PERMIT DRAFT DISCUSSION

6.1 Discharge Limitations

Outfall 001

Parameter	Monthly Average	Daily Maximum	Units
Flow	Report	Report	MGD
Oil and Grease	10	15	mg/l
Temperature	Report	Report	°F
TRC	0.02	0.04	mg/l
TRO	-----	0.06	mg/l
Mercury	-----	Report	ng/l

Parameter	Daily Minimum	Daily Maximum	Units
pH	6.0	9.0	Std Units

Internal Outfall 101

Parameter	Monthly Average	Daily Maximum	Units
Flow	N/A	Report	MGD
Total Chromium	N/A	Report	mg/l
Zinc	N/A	Report	mg/l
126 Priority Pollutants	N/A	Non Detect	mg/l

Outfalls 002, 003, 005, 006, 007, and 008

Parameter	Monthly Average	Daily Maximum	Units
Flow	N/A	Report	MGD
Total Suspended Solids	N/A	Report	mg/l
Oil & Grease	N/A	Report	mg/l
COD	N/A	Report	mg/l
pH	N/A	Report	mg/l
CBOD ₅	N/A	Report	mg/l
Total Kjeldahl Nitrogen	N/A	Report	mg/l
Nitrate plus Nitrite Nitrogen	N/A	Report	mg/l
Total Phosphorus	N/A	Report	mg/l

Outfall 004

Parameter	Monthly Average	Daily Maximum	Units
Flow	N/A	Report	MGD
Total Suspended Solids	N/A	50	mg/l
Oil & Grease	N/A	Report	mg/l
COD	N/A	Report	mg/l
pH	N/A	Report	mg/l
CBOD ₅	N/A	Report	mg/l
Total Kjeldahl Nitrogen	N/A	Report	mg/l
Nitrate plus Nitrite Nitrogen	N/A	Report	mg/l
Total Phosphorus	N/A	Report	mg/l

Iron	N/A	Report	mg/l
Manganese	N/A	Report	mg/l
Nickel	N/A	Report	mg/l
Zinc	N/A	Report	mg/l

6.2 Monitoring Conditions and Rationale

The monitoring frequency established for this NPDES permit is consistent with other similarly issued permits.

Outfall 001

Parameter	Minimum Frequency	Type of Sample
Flow	Daily	24-Hr. Total
Oil and Grease	3/Week	Grab
Temperature	3/Week	Grab
TRC	3/Week	Grab
TRO	3/Week	Grab
Mercury	6/Year	Grab
pH	3/Week	Grab

Internal Outfall 101

Parameter	Minimum Frequency	Type of Sample
Flow	2 X Yearly	Estimate Total
Total Chromium	2 X Yearly	Grab
Zinc	2 X Yearly	Grab
126 Priority Pollutants	2 X Yearly	Grab

Outfalls 002, 003, 005, 006, 007, and 008

Parameter	Minimum Frequency	Type of Sample
Flow	Quarterly	Estimate Total
Total Suspended Solids	Quarterly	Grab
Oil & Grease	Quarterly	Grab
COD	Quarterly	Grab
pH	Quarterly	Grab
CBOD ₅	Quarterly	Grab
Total Kjeldahl Nitrogen	Quarterly	Grab
Nitrate plus Nitrite Nitrogen	Quarterly	Grab
Total Phosphorus	Quarterly	Grab

Outfall 004

Parameter	Minimum Frequency	Type of Sample
Flow	Daily	Estimate Total
Total Suspended Solids	Daily	Grab
Oil & Grease	Quarterly	Grab
COD	Quarterly	Grab
pH	Daily	Grab

CBOD ₅	Quarterly	Grab
Total Kjeldahl Nitrogen	Quarterly	Grab
Nitrate plus Nitrite Nitrogen	Quarterly	Grab
Total Phosphorus	Quarterly	Grab
Iron	Quarterly	Grab
Manganese	Quarterly	Grab
Nickel	Quarterly	Grab
Zinc	Quarterly	Grab

6.3 Schedule of Compliance

The circumstances in this NPDES permit do not qualify for a schedule of compliance.

6.4 Special Conditions

Cooling Water Intake Structures

Section 316(b) of the federal Clean Water Act requires that facilities minimize adverse environmental impact resulting from the operation of cooling water intake structures (CWIS) by using the “best technology available” (BTA). U.S. EPA has promulgated rules to implement these requirements for new facilities (Phase I rules), large, existing power plants (Phase II rules) which are currently remanded, and offshore oil and gas extraction facilities (Phase III rules), and that implementation must take place through the issuance of NPDES permits.

The Phase I rule establishes technology-based performance requirements applicable to the location, design, construction, and capacity of cooling water intake structures at new facilities. This rule establishes BTA determinations for facilities that are newly constructed, required to have an NPDES permit, and that have a design intake flow equal to or greater than 2.0 MGD with at least 25% used as contact or noncontact cooling water purposes.

Federal Register, Vol. 66, No. 243 identifies a two track approach to permitting new CWISs. Track 1 of the Phase I rule identifies that, for facilities equal to or greater than 10 MGD design intake flow, CWISs must meet the following:

- Less than or equal to 0.5 feet per second through-screen intake velocity;
- Location and capacity-based limits on proportional intake flow (For fresh water rivers or streams, intake flow must be less than or equal to 5% of the mean annual flow;...); and
- Design and construction technologies for minimizing impingement mortality must be selected if certain conditions exist where the CWIS is located and design and construction technologies for minimizing entrainment must be selected and implemented.

The permittee has submitted documentation on the design and operation of the CWIS in a letter dated January 10, 2012. The facility has provided IDEM with information that indicates that the maximum design intake volume is 15.8 MGD, with a maximum thru-screen flow velocity of 0.498 ft/sec. Furthermore, a recirculating, closed-loop cooling tower is utilized. In addition, recycling of process wastewaters and storm water exposed to production areas to reduce water intake from the Ohio River.

Based upon this information and documentation provided, IDEM has evaluated the information and has determined that BTA requirements in Track 1 of the Phase I 316(b) rules have been met. A copy of the January 10, 2012, 316(b) submittal can be found on IDEM’s Virtual File Cabinet (VFC) at www.in.gov/idem/6551.

In accordance with 40 CFR 125.87, Indiana Gasification is required to measure actual through-screen flow during this permit cycle to further characterize the nature and extent of the environmental impacts from the CWIS in a scientifically valid manner. This determination will be reassessed at the next permit reissuance to ensure that the CWIS continues to meet the requirements of Section 316(b) of the federal Clean Water Act (33 U.S.C. section 1326). In addition, a reopening clause has been added to the NPDES permit to allow IDEM a chance to modify permit in regards to the CWIS, if necessary.

In accordance with 327 IAC 2-1.5-8 the permit proposes that the Indiana Gasification CWIS must be designed and located to minimize entrainment and damage to desirable organisms. In general, the intake structure shall have minimum water velocity and shall not be located in spawning or nursery areas of important fishes. Water velocity at screens and other exclusion devices shall also be at a minimum. The specific requirements pertaining to the intake structures are contained in Part III of the proposed NPDES Permit.

Mercury

New mercury analytical and sampling methodology provide for limits of detection and quantification at levels below the water quality criterion, and the IDEM is requiring Indiana Gasification to utilize these methodologies to determine if their discharge has reasonable potential to exceed the water quality criterion.

The NPDES permit requires that mercury sampling be conducted bi-monthly in the months of February, April, June, August, October, and December of each year for the term of the permit. This shall be achieved by either installing appropriate analytical facilities or by obtaining the services of a commercial laboratory.

The permittee may submit a request for review of monitoring data after the first year of sampling has been completed using EPA Test Method 1631, Method E. The permit may be modified to reduce monitoring requirements for mercury if it is found that it will not be discharged at a level that will cause, have the reasonable potential to cause, or contribute to an excursion (RPE) above a water quality criteria. Conversely, effluent limits and monitoring requirements shall be added to the permit if RPE exists.

6.5 Spill Response and Reporting Requirement

Reporting requirements associated with the Spill Reporting, Containment, and Response requirements of 327 IAC 2-6.1 are included in Part II.B.2.c. and Part II.C.3. of the NPDES permit. Spills from the permitted facility meeting the definition of a spill under 327 IAC 2-6.1-4(15), the applicability requirements of 327 IAC 2-6.1-1, and the Reportable Spills requirements of 327 IAC 2-6.1-5 (other than those meeting an exclusion under 327 IAC 2-6.1-3 or the criteria outlined below) are subject to the Reporting Responsibilities of 327 IAC 2-6.1-7.

It should be noted that the reporting requirements of 327 IAC 2-6.1 do not apply to those discharges or exceedances that are under the jurisdiction of an applicable permit when the substance in question is covered by the permit and death or acute injury or illness to animals or humans does not occur. In order for a discharge or exceedance to be under the jurisdiction of this NPDES permit, the substance in question (a) must have been discharged in the normal course of operation from an outfall listed in this permit, and (b) must have been discharged from an outfall for which the permittee has authorization to discharge that substance.

6.6 Permit Processing/Public Comment

Pursuant to IC 13-15-5-1, IDEM will publish a general notice in the newspaper with the largest general circulation within the above county. A 30-day comment period is available in order to solicit input from interested parties, including the general public. Comments concerning the draft permit should be submitted in accordance with the procedure outlined in the enclosed public notice form.

Appendix A

Antidegradation Demonstration